



Air Force Research Laboratory | AFRL

Science and Technology for Tomorrow's Aerospace Forces

Success Story

DR. GAIL BROWN NAMED FELLOW OF INTERNATIONAL SOCIETY FOR OPTICAL ENGINEERING



Dr. Gail J. Brown's selection for this coveted appointment recognizes her contributions over several years in the field of semiconductor research and development. She serves as the Materials and Manufacturing Directorate's principal scientist for research on innovative materials for infrared (IR) detector array applications.

Her leadership, ideas, and motivation led to the development of novel materials that enable the Air Force to maintain its technological advantage. Her accomplishments and selection as a Fellow of the International Society for Optical Engineering (SPIE) help advance the directorate's reputation as a leader in materials research and development, and recognize AFRL's efforts to support Air Force operational requirements.



Air Force Research Laboratory
Wright-Patterson AFB OH

Accomplishment

Dr. Brown, a materials scientist and member of the directorate's Survivability & Sensor Materials Division, received an appointment as a SPIE Fellow. The International Society for Optical Engineering honored Dr. Brown for outstanding leadership in the development of semiconductor materials to improve IR sensors for current and future Air Force systems.

Background

Several Air Force weapon systems incorporate imaging array systems that operate in the long and very long IR spectra in order to detect cold objects in darkness. However, while capability and performance demands on these systems are increasing, the space available aboard aircraft and spacecraft to house them remains the same or gets smaller. Hence, imaging array system components, especially IR sensors, must now offer improved performance to meet these demands.

Dr. Brown, a recognized expert in materials for IR detector array applications, specializes in the development of materials to improve the performance of IR sensors used on advanced imaging systems. Dr. Brown's research concentrates on the design, assessment, and demonstration of new semiconducting materials capable of outperforming today's industry standards—silicon and gallium arsenide.

Dr. Brown's pioneering research efforts led to the first reporting of many spectral features of semiconductor materials. In vital Air Force systems, sensors made with these materials offer greatly improved performance and high uniformity over large areas and wavelength tunability, while eliminating design complications and yield problems associated with earlier materials.

SPIE is an international technical society dedicated to promoting the engineering and scientific applications of optical, photonic, imaging, and optoelectronic technologies through various education and communications programs, meetings, and publications. SPIE is the largest international professional engineering society serving the practicing engineer and scientist in the field of optics and photonics. The society serves the global technical and business communities, with more than 17,000 members worldwide in 75 countries.

Additional information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTT, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (01-ML-22)